

# Annual status report 2008

## Coral Reef Fin Fish Fishery



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# Introduction

The Coral Reef Fin Fish Fishery (CRFFF) is a line-only fishery that targets a range of bottom-dwelling reef fish. It consists of a lucrative commercial fishery based primarily on live coral trout, and an iconic recreational and charter fishery. The fishery operates predominantly in the Great Barrier Reef Marine Park (GBRMP), with operators generally using smaller tender boats (dories) working independently from a mother-boat. A comprehensive management system, including an individual transferable quota system, is in place for the commercial fishery to ensure its sustainability into the future.

This report covers the financial year 1 July 2007 – 30 June 2008.

## Fishery profile 2007–08

**Total harvest from all sectors:** Approximately 4866 t<sup>1</sup>

**Commercial harvest:** Approximately 1811 t

**Recreational harvest (2005):** Approximately 2601 t

**Indigenous harvest (2000–01):** Approximately 108 t

**Charter harvest:** 346 t

**Commercial Gross Value of Production (GVP):** Approximately \$40 million

**Number of licences:** 368 RQ fishing endorsements across the L1, L2, L3 & L8 fisheries<sup>2</sup>. 395 charter licences.

**Commercial boats accessing the fishery:** 237 primary vessels. Approximately 218 charter boats.

**Fishery season:** Coral reef fin fish are caught all year round. There are three 9-day closures that occur between October and December each year<sup>3</sup>.

Source: Commercial Fisheries Information System (CFISH) database, 10 November 2008.

## Description of the fishery

### Fishing methods

The CRFFF is a line fishery, in which commercial and recreational fishers are permitted to use up to three lines, with no more than six hooks in total, using either a rod and reel or a handline. L8 fishers can use multiple hook apparatus; this will be reported on separately.

### Fishing area

Commercial operators with an RQ fishery symbol and who possess a line fishing endorsement in the form of an east coast 'L' fishery symbol (i.e. L1, L2, L3, and L8<sup>4</sup>) are permitted to take coral reef species in east coast Queensland waters. The line symbol they are operating under dictates the area in which they can fish (Figure 1).



Figure 1: Map of fishery area

<sup>1</sup> For the purpose of this report, the total harvest estimate for 2007–08 includes the recreational harvest estimate from 2005, based on the assumption that the subsequent years of catch would be similar.

<sup>2</sup> During the period Feb 06 – Dec 07 all L6 and L7 endorsements were replaced with L1 fishery symbols.

<sup>3</sup> The spawning closure for December 2008 was removed

## Main management methods used

Management of the CRFFF is the responsibility of Primary Industries and Fisheries. A comprehensive set of management arrangements is in place under the *Fisheries Regulation 2008* and the *Fisheries (Coral Reef Fin Fish) Management Plan 2003* to manage the harvest of coral reef fin fish. These include:

- limited entry in the commercial fishery
- a total allowable catch (TAC) for the commercial sector, separated into commercial TACs for coral trout, red throat emperor and ‘other coral reef fin fish species’, the commercial TACs are shared through individual transferable quotas
- a range of minimum and maximum fish size limits that apply to both the recreational sector and the commercial sector
- a range of recreational in-possession limits for key species, including a number of ‘no-take’ species (barramundi cod, potato cod, Queensland groper, Chinaman fish, hump-headed Maori wrasse, paddletail and red bass)
- a combined recreational in-possession limit of 20 coral reef fin fish
- three annual nine-day spawning closures that apply to all fishers operating on the east coast between latitude 10° 41’S and 24° 50’S<sup>5</sup>.

The fishery is also subject to restrictions on areas in which it can operate through no-fishing areas declared under the Great Barrier Reef Marine Park (GBRMP) and Queensland Marine Parks Zoning Plans.

## Approximate allocation between sectors

Based on the 2005 estimate, the recreational sector harvested more of the total coral reef fin fish product (approximately 56%) than the commercial, Indigenous and charter sectors combined (approximately 44%).

## Fishery accreditation under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

A Wildlife Trade Operation (WTO) approval, acknowledging that the fishery is being managed in an ecologically sustainable manner, and allowing the continued export of coral reef fin fish caught in Queensland, was granted in November 2005 under Part 13A of the EPBC Act. This approval expired in November 2008. A reassessment was conducted and a new three-year WTO was granted with a new set of recommendations. Progress against both Round 1 and Round 2 recommendations are reported on below.

## Catch statistics

### Commercial

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<sup>4</sup> L8 deep water fishery is reported as a separate fishery under QPIF’s EPBC requirements.

<sup>5</sup> Spawning closures were specified in the Regulation up to the end of 2008. Primary Industries and Fisheries is currently undertaking a review of spawning closures for the fishery to determine the most appropriate means of protecting spawning populations.

The annual commercial catch and effort information for the CRFFF has historically exhibited a varied trend in catch per unit effort, up until the introduction of the CRFF Management Plan in 2004. Catch and fishing effort for coral trout (CT), red throat emperor (RTE) and other reef fin fish species (OS) is expressed as a function of both primary boat days and dory days<sup>6</sup>. A significant decrease in both catch and effort occurred in 2003–04 (Figures 2-4). This decrease reflects management changes that were implemented in

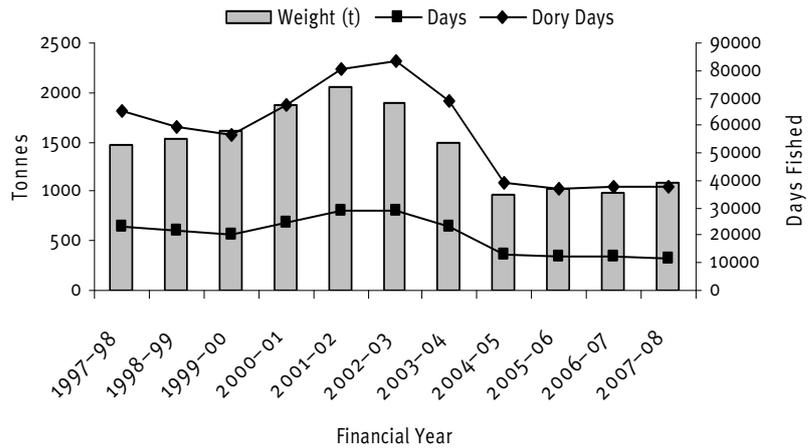


Figure 2: Total commercial catch and effort (days and dory days) of coral trout by quota year 1997-2008 (Source: CFISH database, 12 December 2008).

December 2003 (prohibiting operators from fishing in the CRFFF if they did not hold an RQ symbol). The continued decrease in catch and effort in 2004–05 is most likely the result of the introduction of the ITQ system in the fishery.

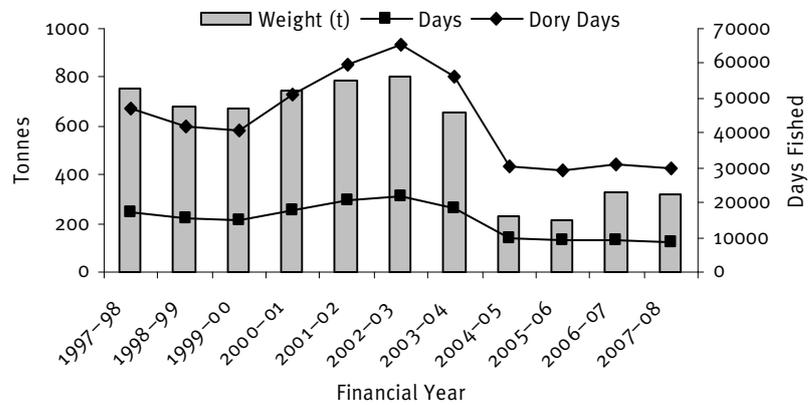


Figure 3: Total commercial catch and effort (days and dory days) of red throat emperor by quota year 1997–08 (Source: CFISH database, 12 December 2008).

In 2007–08 the catch rates of coral trout remained relatively stable, with live fish export continuing to dominate the market trends (Figure 2).

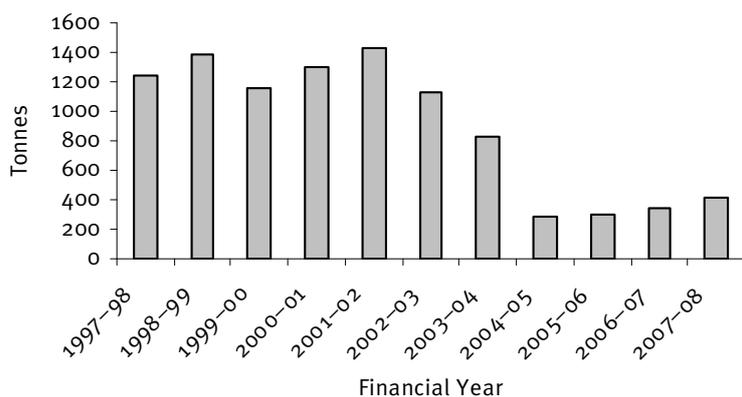


Figure 4: Total commercial catch of other species by quota year 1997-2008 (Source: CFISH database, 12 December 2008).

The catch of red throat emperor decreased slightly in 2007–08 (Figure 3). The catch per unit effort (CPUE) for red throat emperor increased marginally (approximately 35 kg/day to 36 kg/day).

The catch of ‘other’ species (OS) continued to increase in 2007–08 (up 16% from 2006–07). A total of 93 species or species groups have been recorded in the logbooks

<sup>6</sup> Dory days represent the number of fishing platforms (both primary vessels and dories) accessing the fishery.

since 1997–98. Table 1 provides a breakdown of the major OS species component caught since 2000–01.

In 2007–08, approximately 27 t of logbook reported catch was reported as ‘fish unspecified’. This is a significant improvement from 2006–07, where 64 t of catch was reported this way. QPIF have been working to improve species specific reporting, and the introduction of the larger LFO5 logbook in 2007 has aided fishers to do this.

Table 1: Breakdown of the major ‘other species’ component (in kilograms) caught in the CRFFF since 2003–04  
(Source: CFISH database, 12 December 2008)

Common Name	2003-04	2004-05	2005-06	2006-07	2007-08
Cod - bar	13 576	1480	3668	944	25 337
Cod - greasy	647	746	368	470	2774
Cod - Maori	2375	1142	1541	1906	2359
Cod - unspecified	41 054	22 202	27 671	21 970	23 491
Emperor - red	104 320	26 269	28 000	29 099	44 461
Emperor - spangled	37 118	12 334	11 625	16 170	31 900
Hussar - unspecified	40 424	16 260	14 452	19 015	23 022
Jobfish - gold banded	33 209	30 856	28 028	41 407	54 245
Jobfish - green	752	993	782	472	3228
Jobfish - rosy	36 863	2211	6054	4778	7662
Jobfish - unspecified	11 827	23 080	34 848	30 196	10 749
Nannygai - large mouth	61 125	7620	13 660	9644	29 580
Nannygai - small mouth	17 577	1313	820	950	10 450
Nannygai - unspecified	9444	13 961	14 644	17 688	2801
Perch - moses	555	1403	1523	1740	2191
Snapper - flame tail	4085	5687	1603	784	4084
Tropical Snapper - unspec.	286	1768	1406	1597	4523
Stripsey - Spanish flag	4168	21 358	24 226	30 690	59 201
Sweetlip - unspecified	19 157	21 150	24 817	25 761	13 488
Tusk fish - unspecified	23 009	13 567	12 166	13 617	13 984
Tusk fish - Venus	1724	1332	2225	2964	1412

Management arrangements for the coral reef fin fish fishery are based on a commercial TAC of 3061 t<sup>7</sup> shared among commercial fishers through Individual Transferable Quotas (ITQs) for CT, RTE and OS. The quota reporting system requires fishers to call through prior reports (made before landing) and unload notices (made when unloading at wharf), as well as complete catch disposal records. All of these reporting functions are used to validate the commercial fisheries logbooks.

Table 2 shows the reported catch for the 2007–08 quota year and the percentage of total quota used for the period. Current market drivers are the beach price of live CT, which currently attracts a price of around \$32–\$40/kg. Currently, whole or fillet RTE and OS attract around \$6–\$12/kg, resulting in the comparatively low usage of RTE and OS quota.

<sup>7</sup> This figure reflects the actual legislated TAC, however the current allocated quota in the CRFFF is 3182 t, based on awarded line unit entitlements through the allocation and appeals process. Under Section 67 of the Fisheries (Coral Reef Fin Fish) Management Plan 2003, once all decisions and appeals are finalised the chief executive is required to reduce the entitlement under each quota unit to reflect the legislated TAC.

Table 2: Percentage of quota used for CT, RTE and OS in the 2007–08 financial year.  
(Source: Quota monitoring unit, 19 Dec 2008)

	Allocated quota	Quota minus DEWHA holdings	Total catch	% of available quota used
CT	1 423 982	1 288 158	1 158 107	90
RTE	693 630	618 986	233 227	38
OS	1 065 339	956 538	419 086	44

## Recreational

Recreational line fishers are restricted to a maximum of three fishing lines and six hooks (total) in all Queensland waters, and may spearfish coral reef fin fish without the use of SCUBA. QPIF undertakes estimates of recreational catch through the Recreational Fisheries Information System (RFISH) program which is made up of a telephone survey to estimate participation, and volunteer fishing diaries that provide details of catch and effort.

QPIF are currently analysing data on the recreational harvest and release of coral reef species in Queensland. The results from a regional boat ramp survey in south east Queensland will provide fine-scale catch information for the southern part of the state. Catch per unit effort (CPUE) estimates for reef species are also being obtained from a state-wide diary program. These CPUE estimates will be compared to the previous four state wide recreational fishing surveys that the QPIF have conducted; the last in 2005. Please refer to the 2006–07 CRFFF Annual Status Report for previous figures and catch statistics related to recreational harvest.

## Charter

A significant proportion of the Queensland charter sector is involved in providing services to recreational fishers targeting CRFF. The compulsory logbook program for the tour and charter operators was introduced in 1996. Logbook-reported catch indicates that of the reef

species caught during charter operations, OS species catch is historically double that of the CT and RTE catch (Figure 5). The CPUE for OS species remained the same as the previous year, whereas the CPUE for RTE increased from 34 kg/day in 2006–07 to approximately 36 kg/day in 2007–08. The CPUE

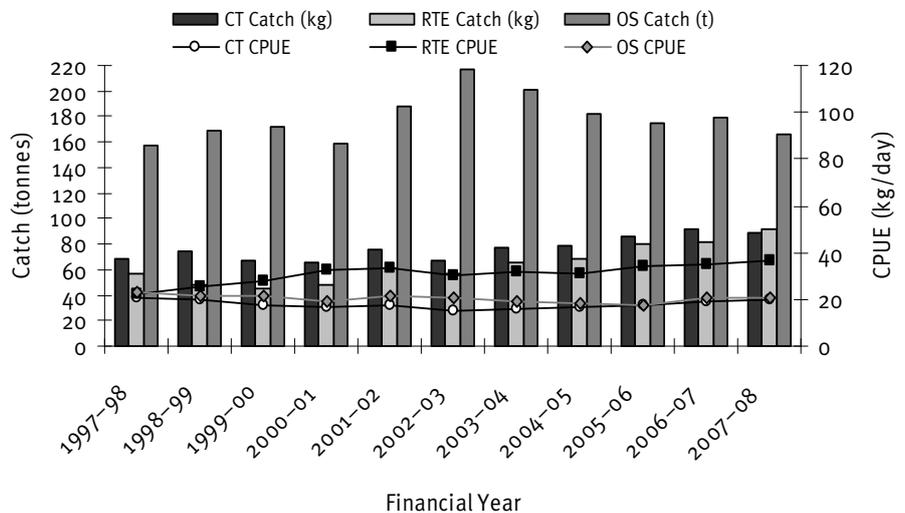


Figure 5: Charter catch of CT, RTE and OS species as reported in logbooks by financial year, 1997–98 to 2007–08 (Source: CFISH Database, 12 Dec 2008).

for CT also increased slightly<sup>8</sup>.

In 2007–08, a total of 8752 days were spent fishing for RQ species by charter operators. There are currently 395 charter licences; however, it is unlikely that all operators access the CRFFF. It is estimated that in 2007–08 approximately 218 operators were actively fishing for RQ species.

## Indigenous

Limited information is available on the total catch of coral reef fin fish by Indigenous fishers. The National Recreational and Indigenous Fishing Survey (NRIFS) did provide some preliminary information, suggesting that approximately 7000 coral trout, 38 000 snappers, 9000 emperors, 12 000 cods and 9000 wrasse/groper were taken by Queensland Indigenous communities in 2000–01.

This suggests that the catch of coral reef fin fish by Indigenous fishers is significant. Using the same weight conversions as those used for the recreational catch, this equates to approximately 108 tonnes.

## Spatial issues/trends

Approximately 95% of reported commercial catch of CRFF are taken from areas within the GBRMP. The spatial distribution of catch and effort in the fishery has changed markedly since management changes in 2004. For the 2007–08 period, the CPUE of coral trout was consistently higher in the mid to northern parts of the GBR, with red throat emperor and other reef species demonstrating higher CPUE in the southern areas (Figure 6).

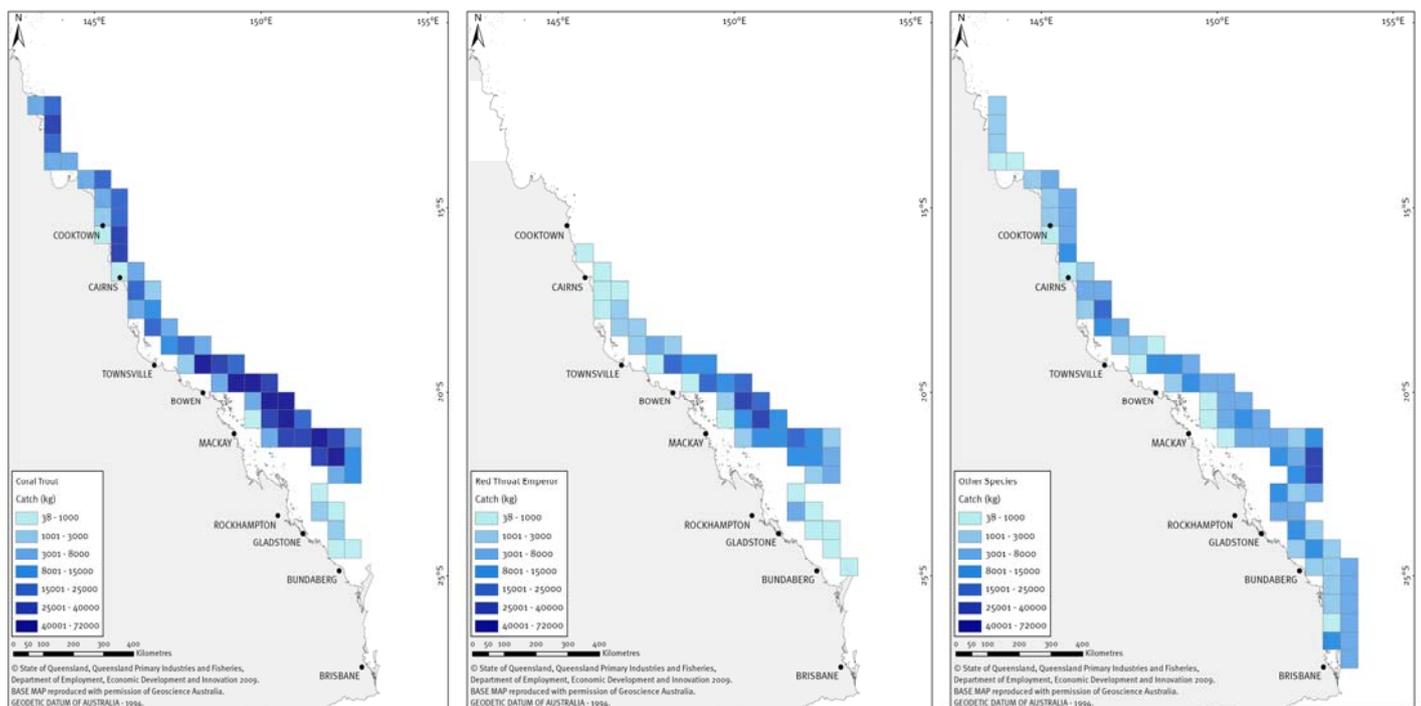


Figure 6: Catch for CT, RTE and OS species in 2007–08.

<sup>8</sup> Previously reported charter catch for RQ species in the CRFFF status reports has been from the latitude -24.05 north (the GBRMP area) only. Amendments have been made this year to include all RQ charter catch from the entire Queensland east coast area; therefore the resulting catch totals are higher than previously reported.

## Socio-economic characteristics and trends

The price obtained for coral reef fin fish depends on the species and product form (e.g. live, fillet, whole dead, trunked). High prices are fetched for top-quality live coral trout, which have dominated the product form of harvested CT since 2000.

The other species harvested, including red throat emperor and those included in the 'other species' category, are almost totally focused on the domestic market. Exporters are attempting to develop overseas markets for some of these species. Most of the domestic market requires the product to be in the fillet form, placing it in direct competition with cheaper imported product.

## Fishery performance

### Appraisal of fishery in regard to sustainability

The CRFFF is managed through one of the most comprehensive quota systems in place in Australia. The management framework allows for continual refinement and improvement to ensure an ecologically sustainable fishery.

Currently, a Management Strategy Evaluation (MSE) for the CRFFF based on the Effects of Line Fishing Simulation model (ELFSim) allows various alternative management options to be tested through population simulation, and the outcomes to be evaluated. The Fisheries Research Development Corporation (FRDC) project "*Development of an individual transferable catch quota model for the Coral Reef Fin Fish Fishery of the Great Barrier Reef*" reported on last year is in the final stages of completion. The project builds on the ELFSim model to assess the effects of the ITQ system on the simulated coral trout and red throat emperor populations and the fishing fleet. Preliminary results indicate that the effectiveness of alternative management strategies is influenced by the TAC for coral trout. In general, increases in the coral trout TAC resulted in a reduction in the ability to achieve conservation, stock and CPUE objectives. The final report will be released in early 2009.

It is proposed that a Stock Assessment Module for the common coral trout (*Plectropomus leopardus*) be developed and run on the simulated populations produced by ELFSim, with the outcomes used to enhance management of the fishery and tailor the collection of fishery-independent data. It is proposed that the enhancement of the MSE will be trialled in lieu of a traditional stock assessment to potentially provide a greater certainty in the sustainability of the fishery. However, recent funding applications for the stock assessment module to commence were unsuccessful, and the project is currently on hold until suitable funding can be obtained.

### Progress in implementing Department of the Environment, Water, Heritage and the Arts (DEWHA) recommendations

DEWHA made a range of recommendations to QPIF during its assessment of the fishery in order to address perceived risks or uncertainties. In November 2008 the fishery was reassessed and a new three-year WTO was granted, along with a new set of conditions and recommendations. Details of the final progress QPIF has made in relation to the Round 1 recommendations are provided in Table 3. Progress against Round 2 recommendations are in Table 4.

Table 3: Progress against Round 1 DEWHA recommendations for the CRFFF.

Recommendation	Progress
QPIF to inform DEWHA of any intended amendments to the management arrangements that may affect sustainability of the target species or negatively impact on bycatch, protected species or the ecosystem.	<i>Completed &amp; Ongoing</i> No changes were made to management arrangements in 2007–08 that impacted negatively on resource sustainability.
From 2006, QPIF to report publicly on the status of the CRFFF on an annual basis including explicitly reporting against each performance measure.	<i>Completed &amp; Ongoing</i> This annual status report is the third to be completed for the fishery since its WTO approval was gazetted in late 2005.
QPIF to reassess the review events in the Management Plan to ensure their appropriateness; that they are quantitative where possible; and they are consistent with the application of operational objectives for the fishery. By December 2006, QPIF is to establish revised objectives, performance measures and indicators for bycatch, protected species and impacts on the ecosystem.	<i>Complete</i> QPIF and the ReefMAC SAG developed performance measurement systems (PMS) for a range of line fisheries during 2006 and 2007. The PMS were finalised and implemented in July 2008.
QPIF to monitor the status of the fishery in relation to the review events and performance measures. Within three months of becoming aware that a review event has been triggered, the QPIF to finalise a clear timetable for the implementation of appropriate management responses.	<i>Complete</i> As above.
QPIF to complete a compliance risk assessment for the CRFFF by mid-2006 and implement a risk-based compliance strategy by December 2006, taking into account risks associated with non-compliance with: <ul style="list-style-type: none"> <li>• catch, possession, size and gear limits</li> <li>• reporting of protected species interactions</li> <li>• area and fishery closures, and</li> <li>• quota limits.</li> </ul>	<i>Complete</i> A compliance risk assessment was completed in June 2006 to determine compliance priorities and facilitate effective use of Queensland Boating and Fisheries Patrol (QBFP) resources. Detailed strategies to address the risks identified by this assessment were developed through the QBFP strategic and operational planning processes and first implemented in July 2006.
QPIF to implement a program to validate logbook data by June 2006. QPIF to ensure that the program enables collection of information on the composition of 'other coral reef fin fish' sufficient for QPIF to monitor and respond to changes in the composition of this group.	<i>Complete</i> Validation of logbook data for the CRFFF was completed in June 2006 using quota monitoring and observer information. A new logbook covering a broader range of OS species was introduced in July 2007. Species reporting has improved significantly since the introduction of the new logbook.

Recommendation	Progress
<p>By end 2006, QPIF to develop a robust and regular fishery assessment process that provides a basis for management decisions which are precautionary and recognise the uncertainty and level of risk. The assessment process will examine the ecological sustainability of the take of coral trout (<i>Plectropomus leopardus</i>) and red throat emperor (<i>Lethrinus miniatus</i>) using robust stock assessments.</p>	<p><i>In progress</i></p> <p>An updated Management Strategy Evaluation (MSE) for the CRFFF based on the Effects of Line Fishing Simulation model (ELFSim) is currently being undertaken. Although not a traditional stock assessment, the ELFSim model allows various alternative management options to be tested through simulation, and the outcomes evaluated.</p> <p>In 2006, QPIF in conjunction with CRC Reef completed a stock assessment of red throat emperor using an age-structured model incorporating information on catch, CPUE and age structure.</p>
<p>Within 18 months, QPIF to undertake a risk assessment to identify 'other coral reef fin fish' most at risk from the fishery. Actions seeking to reduce risk to be implemented as appropriate within a further 12 months.</p>	<p><i>Complete</i></p> <p>QPIF undertook a risk assessment workshop in January 2007, with the outcomes considered by the SAG in March 2007. In July 2007 a new logbook was issued to the fishery to obtain greater species resolution and more intensive catch monitoring to address several moderate risk ratings devised in the risk assessment process. Size limits already reflect the biology of species where information is available. The issue of spawning aggregations is addressed below.</p>
<p>QPIF to develop a process to improve estimates of recreational take and factor this into stock assessments and management controls to ensure overall catch levels are sustainable.</p>	<p><i>Complete</i></p> <p>QPIF have completed a pilot regional survey of recreational fishing in south-east Queensland. The survey tests the bus route creel survey methodology and interviews with anglers have been conducted at boat ramps since November 2007. A revised statewide diary program focussed on recreational boat owners commenced in November 2007.</p>
<p>QPIF to reassess the appropriateness of the total allowable commercial catches for the main target species and 'other coral reef fin fish', taking into account the outcomes of the stock and risk assessments for CRFF species by end 2007.</p>	<p><i>In progress</i></p> <p>The results of the 2006 stock assessment of RTE indicated that the TAC for this species should not be increased at this time, which was agreed upon by ReefMAC. Actions arising from the results of the OS risk assessment are described above.</p> <p>The preliminary results of the FRDC modelling ITQ's project (See Fishery Performance section) for coral trout indicate that the ability to meet management objectives in relation to both coral trout and red throat emperor stocks is influenced by the level at which the coral trout TAC is set. In general, increases in the coral trout TAC resulted in a reduction in the ability to achieve conservation, stock and CPUE objectives for both species. The preliminary project results indicate that the coral trout TAC is currently set at an appropriate level to achieve these objectives.</p>

<b>Recommendation</b>	<b>Progress</b>
QPIF to review current management arrangements and ensure that adequate protection is being given to spawning stocks of the main target species.	<i>In progress</i> The QPIF is currently undertaking a review of spawning closures to ensure that there is adequate protection of spawning stocks of the main target species and other key coral reef fin fish species. This review is being conducted with significant input from the Fishing and Fisheries Research Centre (FFRC) based at James Cook University and ReefMAC; and will be informed by a comprehensive risk assessment.
QPIF to use the results of stock and risk assessments, and research projects, to review the need for specific bycatch management measures and introduce effective and appropriate methods to reduce bycatch, or increase survivability, as needed.	<i>In progress</i> An FRDC-funded research project to determine the impacts of barotrauma on post-release survival of six tropical reef fish species was completed at the end of 2007. The project has provided information on fish handling techniques to be communicated to industry via newsletter, website and other media through a national communication strategy on enhancing fish survival. QPIF's observer program is also delivering some information on discards in the CRFFF which will be considered in determining the magnitude of bycatch.
QPIF to continue to work with industry and other management agencies to reduce the impact of the CRFFF on the broader ecosystem, including impacts relating to anchoring.	<i>Completed &amp; Ongoing</i> Bycatch levels in the fishery are low, which has been reinforced by data collected through the observer program. Industry, through the Queensland Seafood Industry Association (QSIA), is also undertaking to implement a code of practice that will include appropriate methods for the release of bycatch. The QPIF considers that the ecosystem impacts of the fishery relating to anchoring are low, however the QPIF will continue to work with industry and other management agencies to mitigate these risks.

Table 4: Progress against Round 2 DEWHA recommendations for the CRFFF.

<b>Recommendation</b>	<b>Progress</b>
QPIF to conduct an appropriate resource assessment for coral trout within 2 years to ensure that harvest levels are sustainable. This assessment should take into account recreational catch.	<i>Not started</i>
QPIF to ensure the setting of harvest levels for target species takes into account take from all sectors including the recreational sector.	<i>Not started</i>
QPIF to continue to improve: a) validation of commercial logbook catch and	<i>In progress</i> a) QPIF are currently developing a new catch

Recommendation	Progress
<p>effort data; and</p> <p>b) monitoring of interactions with bycatch and protected species including a review of the level of observer coverage needed in the CRFFF within 12 months, to meet the requirements of the Performance Management System.</p>	<p>comparison system between the logbooks and the quota reporting system to better validate both data sources on a regular basis.</p> <p>b) QPIF are currently reviewing the Fisheries Observer Program (FOP) in order to re-prioritise the tasks conducted by observer staff. Outcomes are expected by mid 2009.</p>
<p>QPIF to improve the accuracy of commercial landing records for quota categories, to ensure the Total Allowable Catch is adhered to.</p>	<p><i>In progress</i></p> <p>QPIF are currently developing a new catch comparison system between the logbooks and the quota reporting system to better validate both data sources on a regular basis. In addition, in 2007–08 QBFP conducted 42 prior report checks on CRFF boats, with no offences recorded.</p>
<p>Within 2 years QPIF to:</p> <p>a) implement management arrangements to ensure that the take of sharks and rays is sustainable;</p> <p>b) implement appropriate measure to limit capture and reduce post-release mortality of discarded shark species; and</p> <p>c) continue to improve the identification and recording of the composition and quantity of retained sharks and rays.</p>	<p><i>In progress</i></p> <p>The management arrangements for sharks and rays are currently being reviewed under the East Coast Inshore Fin Fish Fishery (ECIFFF) reassessment. These include the setting of a commercial TAC, limits on the size of sharks harvested and the take of certain species, as well as a new shark specific logbook and field guide to improve species identification. The majority of changes take effect 1 July 2009.</p>
<p>QPIF to ensure that there is adequate protection for spawning of coral reef fin fish species.</p>	<p><i>In progress</i></p> <p>The QPIF is currently undertaking a review of the effectiveness of closures to protect spawning stocks for the main target species and other key coral reef fin fish species. This review is being conducted with significant input from the Fishing and Fisheries Research Centre (FFRC) based at James Cook University and ReefMAC. The FFRC have provided a report of biological, economic and social costs and benefits of spawning closures which is forming the basis of the review.</p>

## Performance against fishery objectives

In 2008, QPIF removed a number of review events from the Fisheries (Coral Reef Fin Fish) Management Plan 2003, which became obsolete with the development of the Performance Measurement System (PMS) for the CRFFF. A final response to the 2006–07 triggered review events is reported below, along with the first report against the PMS for the fishery for the 2007–08 period.

*Final response from 2007 trigger event*

In the 2006–07 status report QPIF reported one triggered review event:

- As per review event (c)(ii) the charter fishing effort days increased more than 20% in a region<sup>9</sup> in a year from the preceding year. The charter fishing effort in the Mackay region between 2005–06 and 2006–07 financial years increased from 989 days to 1279 days (29.3% increase). The number of boats accessing the fishery remained the same.
- As per the same review event (c)(ii), commercial fishing in a region in a (financial) year also increased by 22.4% in the Swains (from 2048 days in 2005–06 to 2507 days in 2006–07), and 22.2% in the Mackay region (from 2062 days in 2005–06 to 2521 days in 2006–07). Both regions had an increase of five boats accessing the respective areas.

QPIF became aware of the triggers in January 2008. The results of a detailed analysis of the catch and effort data were considered by ReefMAC and ReefMAC SAG in March 2008. Based on the outcomes of the reviews, the detected changes in catch and fishing effort levels are considered ecologically sustainable.

In early 2008, QPIF finalised a performance measurement system which will now be reported on annually. The PMS functions as a reporting framework that is a transparent, defensible set of criteria for evaluating the performance of the fishery against management arrangements (Table 5). Within three months of becoming aware that a performance measure has been triggered, QPIF is required to finalise a clear timetable for implementation of appropriate management responses. QPIF became aware of the triggers in February 2009. The results of a detailed analysis of the catch and effort data will be considered by ReefMAC and ReefMAC Scientific Advisory Group (SAG) in early 2009, and an appropriate management response developed.

Table 5: Performance measures and outcomes for the Coral Reef Fin Fish and Deep Water Fin Fish Fisheries in 2007–08.

Performance measure	Performance
<i>Target species</i>	
(i) Annual CPUE for coral trout and red throat emperor shows a decrease of at least 10% in each consecutive year over three years <u>OR</u> decreases by 20% from the preceding quota year.	<i>Not triggered</i> Annual CPUE has remained stable.
(ii) Total mortality ( $Z$ ) exceeds 1.5 times estimate of natural mortality ( $M$ ) for coral trout and red throat emperor. [Future measure]	<i>Not measured</i> QPIF have not yet completed the weighting of catch data required to calculate these estimates.
(iii) The estimate of exploitable biomass of red throat emperor falls below 40% of the estimated virgin biomass.	<i>Not triggered</i> Exploitable biomass of RTE is around 70% as per the last stock assessment in 2006.

<sup>9</sup> 'Region' in the Fisheries (Coral Reef Fin Fish) Management Plan 2003 refers to an area described as a region in the document titled 'A description of commercial reef line fishery logbook data held by the Queensland Fisheries Management Authority', prepared by Mapstone, BD, McKinlay, JP, and Davies, CR, 1996, James Cook University, Queensland.

Performance measure	Performance
(iv) There is a 20% decrease in recreational CPUE for coral trout, red throat emperor and key OS species between consecutive surveys.	<i>Not measured</i> The last survey estimate was obtained in 2005 and is not reflective of the current fishery conditions.
(v) The catch of a relevant group of species of coral reef fin fish under OS line units in a quota year is at least 20% higher than the catch of the relevant group of species under the line units in the preceding quota year.	<i>Triggered</i> In the 2007–08 reporting year, the majority of the key species groups (see PMS document on QPIF website) triggered for catch increases >20% since 2006–07. This is likely attributed to the introduction of the LF05 logbook on 1 July 2007 – which provides greater species specific reporting capacity. Reductions were seen in the reporting of ‘unspecified’ species.
<i>Bycatch and protected species</i>	
(i) <i>Observer information [for a three year collection period] shows the amount of bycatch exceeds 10% of the total catch taken by commercial fishers with a RQ fishery symbol when targeting coral reef fin fish (by numbers of fish).</i>	<i>Not measured</i> Observer information has not yet been collected for a three year period for this fishery.
(ii) <i>Percentage of each category of protected species released alive falls below 90%.</i>	<i>Not triggered</i> There were no interactions with protected species in 2007–08.
<i>Ecosystem impacts</i>	
(i) The Shannon-Wiener index for a bioregion shows a decrease of at least 10% in each consecutive year over three years <u>OR</u> decreases by 20% from the preceding quota year. [Future measure]	<i>Not measured</i> Future measure.
<i>Social</i>	
(i) That the rate of compliance falls below 95% in the commercial fishery and/or 95% in the recreational fishery.	<i>Not triggered</i> Compliance was at 95% in 2007–08.
<i>Economic</i>	
(i) The proportion of the available TAC for CT, RTE and OS landed in any year is <80%.	<i>Triggered</i> The available TAC at the end of 2007–08 for RTE and OS is 38% and 44%, respectively.

## Resource concerns

There are currently no resource concerns for this fishery.

## Ecosystem

### Non-retained species / bycatch

Bycatch information is currently collected through LTMP structured line surveys, as well as by fishery observers on commercial operations (see Monitoring Programs and Results section).

## Interactions with protected species

No interactions have been recorded in the logbook by CRFF line fishers since its introduction in 2002, demonstrating of the low-impact nature of the fishery.

## Fishery impacts on the ecosystem

Line fisheries are generally considered benign in terms of their impacts on the broader ecosystem. Anchor damage and boat fuel by-products have been raised as potential impacts. QPIF continues to work with staff at the GBRMPA and with the commercial fishing industry to minimise any potential impacts from boating in general.

## Other ecosystem impacts

Climate change has recently been linked to increases in the number and extent of coral bleaching events (for example see Hoegh-Guldberg *et al.*, 2007). These events have the potential to impact on local fish populations that rely on reef habitat for refuge or food.

## Research and monitoring

### Recent research and implications

*Evaluation of the resilience of key inter-reefal fish species*, Fishing and Fisheries Research Centre, James Cook University.

This project is being undertaken by the Fishing and Fisheries Research Centre at James Cook University with funding from the Australian Government's Marine and Tropical Sciences Research Facility. The main aims of the project are to identify the life history parameters of fish species from the "other species" quota group using archived data and samples from the Effects of Line Fishing Project, to utilise these data to quantify the resilience and so to enhance the ability of management agencies to ensure the sustainability of this diverse group. To date analysis life history data for species of the emperor and snapper families (Lethrinidae and Lutjanidae) has been completed, and analysis of cod (Serranidae) is underway. The project will be completed in June 2010.

### Monitoring programs and results

#### Long Term Monitoring Program

The QPIF LTMP provides fishery-independent monitoring of CRFFF resources. The objectives of the program are to obtain biological and fishery data to assess the status of the Queensland populations of common coral trout and red throat emperor.

Since 2004, LTMP has conducted two fishery-independent structured line surveys to collect information on relative abundance, age and size structure for the common coral trout and red throat emperor. In 2005–06, the survey program was reviewed by fishery managers, stock assessment biologists and field staff, which led to some significant changes and improvements to the data collected. In the 2006–07 sampling period, the program collected information using fishery independent structured line surveys and fishery dependent catch sampling. From July 2007 onwards, the program will continue to collect information about fish abundance and biological characteristics from structured line surveys for coral trout and red throat emperor. Fishery dependent catch information will not be collected as the data is current not incorporated into the assessment modelling. The next review of the monitoring program is due in 2011 and will re-assess the need to collect fishery dependent catch data. A report on the summary data for 2005 and 2006 will be available in 2008.

## Fisheries Observer Program

In 2007–08 there were no additional Fisheries Observer Program (FOP) trips conducted within the CRFFF. For results reported previously, see the CRFFF 2006–07 Annual Status Report.

## Collaborative research

QPIF continues to work collaboratively across a range of projects and with a range of organisations to ensure that management is based on the best available information. QPIF is maintaining effective communication with researchers undertaking coral reef fish research as part of the Marine and Tropical Science Research Facility (MTRSF).

## Fishery management

### Compliance report

During the 2007–08 quota year, a total of 5814 units were inspected in the CRFFF. Of these, 618 were commercial vessel inspections. The majority of the remaining inspections were of recreational fishers, with the remainder comprising camp sites, fishing clubs, tour groups, charter/tour operators, private property, motor vehicles and marketing premises. During this period, 349 offences were detected in association with 293 inspections, corresponding to a compliance rate of 95% on units inspected. A summary of offences is provided in Table 6.

Offences are reported as either a Fisheries Infringement Notice (FIN); Caution (FIN Caution or official caution issued by Legal); or Prosecution (to proceed by complaint summons).

Table 6: Offences recorded in the Queensland Coral Reef Fin Fish Fishery (July 2007 – June 2008). The prosecutions recorded here are still pending.

OFFENCE	FIN	Prosecution	Caution
Take, possess or sell CRFF regulated by size	154	2	37
Possess CRFF regulated by form	64	8	25
Recreational fisher take or possess CRFF regulated by number	4	-	-
Contravened closed waters/closed season	15	1	3
Contravened a quota	-	-	3
Contravened a condition of an authority (holder of a filleting permit or commercial fisher acting under the holder's RQ licence, may fillet coral reef fin fish stated in the permit on board the primary boat identified on the holder's RQ licence)	-	1	-
Did an act that may only be done by the holder of an authority (e.g. take fish for trade or commerce without a commercial fisher licence)	-	2	-
Fail to ensure that the boat mark is placed as required	8	-	6
Fail to comply with a requirement to keep/give stated records in the approved form	5	3	3
Fail to produce a document required to be available for inspection	4	-	1
<b>TOTAL</b>	<b>254</b>	<b>17</b>	<b>78</b>

A compliance risk assessment was completed for this fishery in June 2006 in order to determine compliance priorities and allow the most effective use of Queensland Boating and Fishery Patrol

(QBFP) resources. The risk assessment identified violation of size and in possession limits; recreational fishers taking fish for commercial purposes; violation of Great Barrier Reef Marine Park zoning provisions; failure to keep required information/ providing inaccurate information as the highest priorities for enforcement and compliance in the Fishery. There were also a number of activities rated as having a moderate risk, which are also being addressed. Detailed strategies to address the risks identified by this assessment were developed through the QBFP strategic and operational planning processes and were first implemented in July 2006. A new compliance risk assessment will be conducted in late 2009.

## Changes to management arrangements in the reporting year

No changes were made to management arrangements in 2007–08.

## Complementary management

### *Torres Strait*

During 2008, the non-traditional sector of the CRFFF in the Torres Strait Protected Zone (TSPZ) was removed via a Protected Zone Joint Authority (PZJA) facilitated resource reallocation process. This was a two stage process that saw five CRFFF licences surrendered on the 31st January 2008 and the remaining four surrendered on the 30th June 2008. As a result the traditional inhabitants of the TSPZ now hold 100% of the fishing capacity for this fishery. Given the traditional inhabitants minimal percentage of overall catch in the CRFFF to date, 60 t of quota was allocated between two non-traditional operators for the 2008–09 financial year.

Currently, Torres Strait reef line fishing operating in the TSPZ is managed under a host of input controls (similar to the east coast CRFFF). A new management plan for the fishery is in development, and is expected to be implemented in 2010, which will include the setting of a TAC for the fishery.

## References

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### Image

Common coral trout (*Plectropomus leopardus*)

